CLAIMS

What is claimed is:

1. An arrangement for controlling a component in a vehicle in combination with the vehicle, comprising

measurement means for measuring at least one morphological characteristic of an occupant;

determination means for obtaining a current position of at least a part of a seat on which the occupant is situated; and

control means coupled to said measurement means and said determination means for controlling the component based on the at least one measured morphological characteristic of the occupant and the current position of the seat.

2. The arrangement of claim 1, wherein the component is an occupant restraint device.

3. The arrangement of claim 1, wherein the component is an airbag, said control means being structured and arranged to control inflation of said airbag.

4. The arrangement of claim 1, wherein the component is selected from a group consisting of a brake pedal, an acceleration pedal, a rear-view mirror, a side mirror and a steering wheel.

5. The arrangement of claim 1, wherein said measurement means are structured and arranged to measure a plurality of morphological characteristics of the occupant.

6. The arrangement of claim 1, wherein said measurement means are structured and arranged to measure a height of the occupant.

7. The arrangement of claim 6, wherein said measurement means comprise at least one height sensor arranged in the seat.

8. The arrangement of claim 1, wherein said measurement means are structured and arranged to measure weight of the occupant.

9. The arrangement of claim 1, wherein the component is an airbag, said control means being structured and arranged to control flow of gas from said airbag.

10. The arrangement of claim 1, further comprising:

adjustment means for moving the seat; and

memory means coupled to said determination means for storing the current position of the seat,

said adjustment means being coupled to said memory means such that an adjusted position of the seat is stored in said memory means.

11. The arrangement of claim 10, further comprising a processor coupled to said measurement means for determining an adjusted position of the seat for the occupant based on the at least one measured morphological characteristic; said adjustment means being coupled to said processor such that said processor directs said adjustment means to move the seat to the determined adjusted position of the seat.

12. The arrangement of claim 1, wherein said determination means comprise a system for determining a current position of a bottom portion of the seat.

13. The arrangement of claim 1, wherein said determination means comprise a system for determining a current position of a back portion of the seat.

14. The arrangement of claim 1, wherein the component is an airbag, said control means being arranged to control a direction of deployment of said airbag.

15. A method for controlling a component in a vehicle, comprising the steps of:

measuring at least one morphological characteristic of an occupant;

obtaining a current position of at least a part of a seat on which the occupant is situated; and

controlling the component based on the at least one measured morphological characteristic of the occupant and the current position of the seat.

16. The method of claim 15, wherein the step of obtaining a current position of at least a part of the seat comprises the step of obtaining the current position of a bottom portion of the seat.

17. The method of claim 15, wherein the step of obtaining a current position of at least a part of the seat comprises the step of obtaining the current position of a back portion of the seat.

18. The method of claim 15, wherein the at least one morphological characteristic is height of the occupant.

19. The method of claim 15, wherein the step of measuring the at least one morphological characteristic comprises the step of arranging a weight sensor in connection with the seat such that the at least one morphological characteristic is the weight of the occupant.

20. The method of claim 15, wherein the component is an airbag, the step of controlling the component comprising the step of controlling inflation of the airbag.

21. The method of claim 15, wherein the component is an airbag, the step of controlling the component comprising the step of controlling flow of gas from the airbag.

22. The method of claim 15, wherein the component is an airbag, the step of controlling the component comprising the step of adjusting a direction of deployment of the airbag.

23. The method of claim 15, further comprising the step of enabling manual or automatic adjustment of the seat, the step of obtaining a current position of at least a part of the seat comprising the step of storing the current position of the seat if the seat is adjusted.

24. The method of claim 15, further comprising the steps of:

determining an adjusted position of the seat for the occupant based on the at least one measured morphological characteristic, and

moving the seat to the determined adjusted position.

25. The method of claim 15, wherein the component is selected from a group consisting of a brake pedal, an acceleration pedal, a rear-view mirror, a side mirror and a steering wheel.

26. An arrangement for controlling deployment of a component in a vehicle in combination with the vehicle, comprising

measurement means for measuring at least one morphological characteristic of an occupant;

a processor coupled to said measurement means for determining a new seat position based on the at least one morphological characteristic of the occupant;

adjustment means for adjusting the seat to the new seat position; and

control means coupled to said measurement means and said processor for controlling the component based on the at least one measured morphological characteristic of the occupant and the new seat position.

27. The arrangement of claim 26, wherein the component is a deployable occupant restraint device whereby the deployment of said occupant restraint device is controlled by said control means.

28. The arrangement of claim 26, wherein said processor comprises a control circuit or module.

29. The arrangement of claim 26, wherein said processor is arranged to determine a new position of at least one of a bottom portion of the seat and a back portion of the seat.

30. The arrangement of claim 26, wherein said adjustment means comprise at least one motor for moving the seat or a portion thereof.

31. The arrangement of claim 26, wherein said measurement means are structured and arranged to measure a plurality of morphological characteristics of the occupant.

32. The arrangement of claim 26, wherein said measurement means are structured and arranged to measure a height of the occupant.

33. The arrangement of claim 32, wherein said measurement means comprise at least one height sensor arranged in the seat.

34. The arrangement of claim 26, wherein said measurement means are structured and arranged to measure weight of the occupant.

35. The arrangement of claim 26, wherein the component is an airbag, said control means being structured and arranged to control inflation of said airbag.

36. The arrangement of claim 26, wherein the component is an airbag, said control means being structured and arranged to control flow of gas from said airbag.

37. An arrangement for a vehicle, comprising:

a vehicle seat provided for a vehicle occupant and movable relative to a chassis of the vehicle,

at least one motor for moving said seat;

a processor for controlling said at least one motor to move said seat;

memory means for retaining an occupant pre-defined seat locations;

memory actuation means for causing said processor to direct said at least one motor to move said seat to the occupant pre-defined seat location retained in said memory means;

measuring means for measuring at least one morphological characteristic of the occupant;

automatic adjustment means coupled to said processor for positioning said seat based on the at least one morphological characteristic measured by said measuring means;

manual adjustment means coupled to said processor manually operable for permitting movement of said seat; and

an actuatable occupant protection device for protecting the occupant,

said processor being arranged to control actuation of said occupant protection device based on the position of said seat wherein location of the occupant relative to said occupant protection device is related to the position of said seat.

38. The arrangement of claim 37, wherein said processor is arranged to suppress actuation of said occupant protection device when the position of said seat indicates that the occupant is out-of-position for the actuation of said occupant protection device.

39. The arrangement of claim 37, wherein said occupant protection device is an airbag system including airbag and enabling a variable inflation of said airbag, said processor being arranged to determine the inflation of said airbag based on the location of the occupant in view of the relationship between the location of the occupant and the position of said seat.

40. The arrangement of claim 39, wherein enabling of the variable inflation of said airbag is provided by varying an amount of gas flowing into said airbag during inflation.

41. The arrangement of claim 37, wherein said occupant protection device is an airbag system including an airbag and enabling a variable deflation of said airbag, said processor being arranged to determine the deflation of said airbag based on the location of the occupant in view of the relationship between the location of the occupant and the position of said seat.

42. The arrangement of claim 41, wherein enabling of the variable deflation of said airbag is provided by an exit orifice or valve arranged in said airbag and varying the size of said exit orifice or valve.

43. The arrangement of claim 37, wherein said occupant protection device is an airbag system including an airbag having an adjustable deployment direction, said processor being arranged to determine the deployment direction of said airbag based on the location of the occupant in view of the relationship between the location of the occupant and the position of said seat.

44. In a motor vehicle having a passenger compartment having a driver's seat in which an occupant sits, a seat adjustment system comprising:

a seat;

power means for moving said seat relative to the passenger compartment from an initial position to an adjusted position;

measurement means for measuring at least one morphological characteristic of the occupant, said measurement means generating a first signal representative of said at least one measured morphological characteristic; and

a processor connected to said power means and said measurement means for controlling said power means, said processor comprising computational means for determining an optimum adjusted seat position based on said at least one morphological characteristic, said processor generating a second signal corresponding to said optimum adjusted seat position which is based on said first signal from said measurement means;

said first signal being input from said measurement means into said processor;

said second signal being input into said processor such that said processor affects said power means to move said seat to the optimum adjusted seat position.

45. The system of claim 44, wherein said at least one morphological characteristic is the height of the occupant from an upper surface of a bottom portion of said seat.

46. The system of claim 44, wherein said at least one morphological characteristic is the weight of the occupant on said seat.

47. The system of claim 44, wherein said measurement means is attached to said seat.

48. The system of claim 44, wherein said seat further comprises a headrest, said measurement means being attached to or incorporated within said headrest.

49. The system of claim 44, wherein said vehicle has a headliner and said measurement means is attached to said headliner.

50. The system of claim 44, wherein said vehicle has a roof including support pillars and said measurement means is attached to at least one of said support pillars.

51. The system of claim 44, wherein said power means is arranged to return said seat to the initial position when said seat is unoccupied.

52. The system of claim 44, wherein said seat has a seat back and said power means move said seat to the adjusted position via angular movement of said seat back relative to the passenger compartment.

53. The system of claim 44, wherein said seat comprises means for changing the stiffness of said seat in response to said at least one measured morphological characteristic.

54. The system of claim 44, wherein said seat comprises means for changing the damping of said seat in response to said at least one measured morphological characteristic.